REMARKS

Claims 1-16 have been rejected under 35 USC 112, first paragraph, on the grounds that the prior art Ross™ electrode is insufficiently described. Neither the law nor the facts will support this rejection.

The prior art Ross™ electrode is described in detail at p. 2, l. 17-29 and p. 7, l. 17-p. 8, l. 14 of the written description.. Further, it is illustrated in Fig. 1, together with the improvement to it of the present invention. Those portions of Fig. 1 which comprise prior art to the present invention and those portions which comprise the present improvement to it are carefully and specifically delineated in the description at p. 7, l. 17-p. 8, l. 14 with specific reference to Fig. 1. See the statement at p. 8, l. 15-17:

> So far the construction described is generally that of the previously-known Ross pH electrode and does not comprise our invention. The modification to that electrode which does comprise our invention will now be described. (emphais added)

The improvement to the prior art Ross™ electrode is then described in detail beginning at p. 8, l. 18. From this, no one of ordinary skill in the art can fail to understood what is asserted to be part of the prior art and what is asserted to constitute an improvement over it.

With respect to the electrically conductive leads 19 and 48, the former is introduced at p. 7, l. 26 as "an electrically conductive lead 19 disposed within the electrolyte and extending upwardly and out through the top of the electrode 10 to a measuring instrument (not shown)." The electrolyte referred to is a "sensing electrolyte (not shown) [which] fills bulb 12 and tube 14 and provides an electrically-conductive path between a liquid (not shown) in which bulb 12 may be immersed" and the lead 19. P. 7, l. 24-p. 8, l. 1. The lead 19 is explicitly illustrated and numbered in Fig. 1.

Similarly, lead 48 is introduced and described in detail at p. 8, l. 23- p. 9, l. 3 as follows:

> The electrode assembly is shown in more detail in Figs. 2 and 3, and comprises a central post 44 and an electrically conductive lead 48 extending through a central core on the interior of the post and internally bonded within the post throughout at least a region 50 to form a fluid-tight seal therewith. On emerging from the bottom 52 of the post 44, the lead 48 is coiled back around the exterior of the post in a generally helical configuration. The stiffness of the lead is preferably sufficiently great that the coil remains essentially fixed in place without the need for adhesives or other bonding to the post. An electrically conductive lead 54 is conductivity connected to the lead 48 at the upper end of the chamber 42 as will subse-

quently be described in more detail. The lead 54 connects to an external measuring instrument (not shown).

Similarly, the lead 48 is explicitly shown and numbered in Fig. 1 and other drawings. Again, the disclosure is more than clear on this point to one of ordinary skill in the art, 35 USC 112.

With respect to the reference numeral 60, we are checking the drawings on file in this application in order to determine whether this numeral has inadvertently been omitted from Fig. 4 and ask that the Examiner hold this objection in abeyance for the moment.

We thank the Examiner for calling to our attention certain informalities in the claims, specifically, in claims 7, 8, 10, and 14-16. We have amended these claims to correct the informalities.

Claims 1-16 were rejected under 35 USC 103 over Mantzell and Coleman or Kirsten. None of these disclose the present invention, either separately or in combination. Mantzell shows a conductive lead 9 immersed in calomel paste 8 inside a well 7. The well in turn is totally immersed in a reference ("comparison") electrolyte 13. Mantzell neither possesses the structure of applicants' invention nor provides its benefits. In particular, equating the well 7 of Mantzell to the chamber of applicants' claims for purposes of argument only, Mantzell does not provide a tube connected to an end of the

chamber and extending toward the sensing tip, let alone a tube connected to a second end of the chamber. The housing 1 cannot be made to fulfill this restriction, since the well is within the housing, not connected to it.

Nor does Mantzell achieve the benefits provided by applicant's structure. As noted above, in Mantzell, the reference electrode (comprising the wall 7, the calomel paste 8, and the conductive lead 9) is entirely immersed in the reference electrolyte 13. Thus, impurities that enter the reference electrolyte readily travel to the reference electrode and degrade its sensitivity, its accuracy, or its reliability, or all three. In contrast, in applicants' structure, the tube connecting the electrode chamber to the sensing tip of the ion-selective electrode limits the extent to which contamination introduced at the sensing tip can adversely affect the reference electrode. Additionally, the tube provides thermal isolation of the reference electrode from the fluid being tested. See p. 3, l. 6-p. 4, l. 21 of the instant application.

Neither Coleman nor Kirsten rectify the fundamental deficiencies of Mantzell. Both show merely that an electrode can be sealed to glass. Applicant makes no claim that sealing an electrode to glass, by itself and apart from the specific structure defined by the claims, is itself novel.

Since independent claims 1 and 14 are distinguishable for the reasons given above, no further argument is required as to the dependent claims.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

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